



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

NV

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/662,200	09/11/2003	Gary C. Vanstone	EM-1991	9114
5179	7590	10/27/2004	EXAMINER	
PEACOCK MYERS AND ADAMS P C			NGUYEN, THONG Q	
P O BOX 26927			ART UNIT	PAPER NUMBER
ALBUQUERQUE, NM 871256927			2872	

DATE MAILED: 10/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/662,200	Applicant(s) VANSTONE ET AL.	
	Examiner Thong Q Nguyen	Art Unit 2872	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 9/11/03 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Drawings

1. The drawings contain three sheets of figures 1-4 were received on 9/11/2003.

These drawings are objected by the Examiner for the following reason(s).

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: The reference "30" as stated in the specification in page 4 is not shown in at least one figure. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: The reference "37" shown in figure 2 is not mentioned in the specification. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the

application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

4. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the feature related to the stop as recited in each of claims 4 and 14; the feature related to the common fixture for the primary and tertiary mirrors as recited in each of claims 7 and 17; and the feature related to the movement of the secondary mirror as recited in claim 8 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering

of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

5. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-3, 5-7, 9-13, and 15-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Chan et al (U.S. Patent No. 5,414,555).

Chan et al disclose an optical device such as electro-optical imaging sensors operating in a bandwidth from visible wavelengths to infrared wavelengths. The device comprises a telescope constituted by three mirrors and a sensing system. The three mirrors as described in columns 4-7 and shown in figures 2-5 and 8 comprises a primary mirror (M1), a secondary mirror (M2) and a tertiary mirror

Art Unit: 2872

(M3) wherein the primary mirror and the tertiary mirror share a common vertex and all mirrors share a common axis and wherein the primary-tertiary mirror pair is fabricated on a common substrate with single point diamond turning for the purpose of eliminating the need for aligning the two mirrors. Regarding to the tilting feature of the secondary mirror, it is noted that the arrangement of the second mirror in the process of alignment with the pair of primary-tertiary mirrors is able to tilt and angle with the alignment axis. Regarding to the feature that there is a hole at a junction of the primary and tertiary mirror, it is noted that the three mirrors as arranged in the figure 2 shown that there is a hole between the primary mirror and the tertiary mirror. Regarding to the feature related to the insertion of a rod and/or laser for an alignment purpose as recited in claims 6 and 16, such a feature is related to a method step for alignment the three mirrors and thus is not given a patentable weight as decided in the Courts which decides that a method step in an apparatus claim is not given a patentable weight.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 4 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chan et al in view of Hallam et al (U.S. Patent No. 4,598,981).

The optical device having three mirrors wherein the primary mirror and the tertiary mirror share a common vertex and all mirrors share a common axis and wherein the primary-tertiary mirror pair is fabricated on a common substrate with single point diamond turning for the purpose of eliminating the need for aligning the two mirrors as provided by Chan et al does not disclose the use of a stop at the secondary mirror. However, the use of a stop at or near the secondary mirror for the purpose of controlling the light and reducing the image aberrations is known to one skilled in the art as can be seen in the optical device provided by Hallam et al. In particular, Hallam et al disclose a wide angle telescope having three mirrors and a sensing system. The use of baffle element at the position of the second mirror acts as a stop for the light beam (see column 3 and fig. 1). It is also within the level of one skilled in the art to adjust the distance between the stop and the secondary mirror based on the optical characteristics such as focal length of the mirror for the purpose of reducing the image aberration and blocking stray radiation outside of the field of view. Thus, it would have been obvious to one skilled in the art at the time the invention was made to modify the optical device having three mirrors and a sensing system as provided by Chan et al by using a stop at or near the secondary mirror of the system as suggested by either Hallam et al for the purpose of reducing the image aberration and blocking stray radiation outside of the field of view.

10. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chan et al in view of Pinson (U.S. Patent No. 4,988,858).

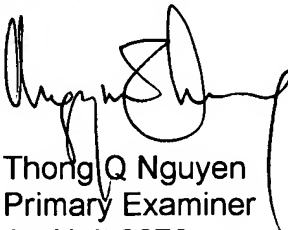
The optical device having three mirrors wherein the primary mirror and the tertiary mirror share a common vertex and all mirrors share a common axis and wherein the primary-tertiary mirror pair is fabricated on a common substrate with single point diamond turning for the purpose of eliminating the need for aligning the two mirrors as provided by Chan et al does not disclose that the secondary mirror is able to move for the purpose of focusing. However, the use of an optical device having a primary system and a secondary system for receiving and guiding light from an object to a receiving system wherein either the receiving system or the secondary system is moved for the purpose of focusing is known to one skilled in the art as can be seen in the optical device provided by Pinson. In particular, in column 3 and claim 3, Pinson discloses the movement of the secondary mirror for the purpose of adjusting the focus of the system. Thus, it would have been obvious to one skilled in the art at the time the invention was made to modify the optical system provided by Chan et al by moving the secondary mirror as suggested by Pinson for the purpose of focusing.

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thong Q Nguyen whose telephone number is (571) 272-2316. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew A Dunn can be reached on (571) 272-2312. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Thong Q Nguyen
Primary Examiner
Art Unit 2872
